



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/208,962	12/10/98	ELCO	R 4414-D

MM42/1119
BRIAN J HAMILLA INTELLECTUAL PROPERTY
LAW DEPARTMENT
FCI/BERG ELECTRONICS GROUP INC
825 OLD TRAIL RD
ETTERS PA 17319

EXAMINER

ABRAMS, N

ART UNIT	PAPER NUMBER
----------	--------------

2839

6

DATE MAILED: 11/19/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/208962

Applicant(s)

E1C0

Examiner

Abrams

Group Art Unit

2839

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 10-5-99
- ☒ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1, 2, 4-20, 22-41 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1, 2, 4-20, 22-41 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☒ The proposed drawing correction, filed on 10-5-99 is ☒ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

Art Unit: 2839

Title, reference to "solder balls" should be added. Page 1, SN.s must be updated when possible.

In the next response applicant should include a discussion of the interview of November 4, 1999.

Abstract, line 14 "mass" should be --ball--.

Claims 32-40 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim 32 feature "fused to" lacks basis in the disclosure as filed). Nor does this seem to be an inherent aspect of the disclosed device.

In addition, the present spec. does appear to provide basis for such terms.

Claims 1-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fedder, Kanybowski, Feldman or Kursunsky, anyone of them taken with Noschese, Swamy, Romine, Teka, Lin, Seidler and Electronics.

The references are applied as discussed in the last office action. For claim 18, it would have been obvious, even without other teachings to form the Feldman device with four or six rows of signal contacts 20 and 40 each one with a solder mass as in Seidler, Romine, etc. For Kandibowski, four rows of signal contacts are seen in each housing.

Claims 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noschese in view of Fedder, Lin, Feldman and Swamy.

Art Unit: 2839

For claim 18, obvious to form the Noschese pins in three or more rows and columns in view of Lin at 32, and Fedder, pins 54, etc. Noschese solder masses 28 meet claim language. In addition, it would have been obvious to use round solder balls of surface mount type in view of Lin and Swamy at 212. Also obvious to form Noschese device mating part with housing wall about pins as in Feldman at 4 or 2.

Claims 1-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romine in view of Fedder, Feldman, Noschese, Seidler, Electronics, Teka, Lin and Swamy.

The references are applied as in last office action.

Applicant's arguments filed with the amendment and pertinent to the above rejections have been fully considered but they are not persuasive.

For claim 18, Kandybowski and Fedder all disclose three or more rows and columns of contacts, especially if ground contacts are included. For Feldman, Korsunsky, Romine, Noschese, obvious to include three rows and columns of contacts all formed with solder masses since Swamy discloses multiple rows of solder balls, even if his contacts are of a different type. Nor has applicants three row/column feature, been shown to solve any problem in the technology. No change is disclosed that would facilitate inspection or cleaning of the "inside rows" of solder connections and the decision to include such rows should not overcome Romine or the other patents.

For claim 32, the use of heat to join (fuse) the Romine, Swamy, etc. contacts to solder masses should be considered obvious especially in view of lack of discussion of the "fusing"

Art Unit: 2839


feature in the spec. of this case. In addition, this case is concerned with solder ball connections and differences in contact shapes and orientations should not overcome the prior art especially since the solder ball and contact shape features are entirely independent.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to N. Abrams at telephone number (703) 308-1729.

Abrams/dc
November 17, 1999


NEIL ABRAMS
EXAMINER
ART UNIT 322